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Advanced Hodgkin's Disease in a Pregnant HIV Seropositive Woman: Favorable Mother and Baby Outcome Following Combined Anticancer and Antiretroviral Therapy

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We describe a 33 y/o HIV$^+$ woman who developed advanced Hodgkin's disease (HD) during the 2nd trimester of her pregnancy. Combination chemotherapy and antiretroviral treatment along with opportunistic infection prophylaxis were administered. At term, while in partial remission, she delivered by a Caesarian section a healthy baby, PCR-negative for HIV. A complete remission was later achieved upon completion of the chemotherapy regimen. Since both the incidence of HD and the proportion of young women among the HIV$^+$ individuals are increasing, it seems important to recognize that successful completion of pregnancy with no deterioration of accepted surrogate parameters of HIV disease progression is achievable in a carefully treated HIV$^+$ pregnant woman with advanced HD. Am. J. Hematol. 63:57–58, 2000.

Key words: HIV; Hodgkin's disease; therapy; pregnancy

INTRODUCTION

Hodgkin's disease (HD) in patients infected by the human immune deficiency virus (HIV) is still not considered to be an AIDS-defining condition. However, it is becoming increasingly recognized that HD in the setup of HIV infection has a different clinico-pathological pattern than that in non-HIV population [1]. The reported incidence of HD in HIV-infected patients is 2 [2] to 38 [3] times higher than in matched HIV-seronegative patients. The most prevalent histological subtype seen in HIV$^+$ is the mixed cellularity subtype of HD, with advanced-stage disease involving extranodal sites and associated with B symptoms being more common, and mediastinal involvement less common, than in population not infected by HIV [4]. The treatment of advanced HD in a pregnant patient comprises a considerable challenge by itself [5] and information concerning the outcome following combination chemotherapy (CCT) and concomitant anti-retroviral therapy (ART) in a pregnant HIV$^+$ woman with HD is almost absent. We present the favorable outcome of such treatment for both mother and baby.

CASE PRESENTATION

A 33-year-old heterosexually infected HIV$^+$ woman became pregnant while on ART therapy with Zidovudine (ZDV) and Lamivudine (3TC) for 4 months. Indinavir had to be discontinued after a short time due to gastrointestinal adverse effects. Viral load decreased (7×10^4 to 7×10^2 copies/ml), and the CD4$^+$ cell count remained stable at about 320 cells/μl. The pregnancy was uneventful until the 25th week, when asymptomatic left-sided cervical lymphadenopathy appeared. Biopsy demonstrated Hodgkin's disease, mixed cellularity, and CT scan of the chest showed masses in the parenchyma of both lungs. Abdominal imaging and bone marrow biopsy

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showed no disease (stage IVA). Obstetric evaluation, including sonogram of the reproductive organs and the fetus, was normal for a 25th week of pregnancy. Combination chemotherapy (CCT) according to the ABVD regimen (Doxorubicin, Bleomycin, Vinblastine, and Dacarbazine) [6] was started at the 27th week of pregnancy, and 3 cycles were administered and well tolerated, resulting in marked improvement. The double agent ART was continued concomitantly, as well as pneumocystis carinii pneumonia (PCP) prophylaxis with aerosol pentamidine and mycobacterium tuberculosis (MTB) prophylaxis with oral isoniazide. During the first cycle a marked decrease of the hemoglobin was noted and attributed to the additive effect of ZDV and CCT. Stavudine (d4T) was substituted for ZDV in order to minimize the myelotoxicity. Granulocyte-colony stimulating factor (G-CSF) was used to support the neutrophil counts. During this period the maternal $CD4^+$ cell count increased (from 203 to 392 cells/μl) and the viral load decreased (from 7×10^2 to 10^2 copies/ml). The obstetric parameters were followed closely, including weekly sonograms. On the 39th week a healthy male baby weighing 2,350 g was delivered by elective Caesarian section. At the age of 9 months, the baby is clinically well and is PCR-negative for HIV. An additional 4 cycles of CCT according to the MOPP-ABV regimen (Mechlorethamine, Vincristine, Procarbazine, Prednisone, Doxorubicin, Bleomycin, Vinblastine) [7], along with the same ART and with G-CSF support, were administered uneventfully, and complete clinical remission was achieved.

DISCUSSION

HIV-infected patients are more likely to develop HD [2,3], and our patient's features closely match the reported features of this distinct entity (HD-HIV): mixed cellularity subtype, advanced-stage disease involving extranodal sites, high prevalence of B symptoms (not present in our patient), and low prevalence of mediastinal involvement [4]. The decision to treat this patient with advanced-stage HD and lung involvement during the 2nd trimester of pregnancy with CCT is relatively well-established [8]. Hence the information concerning the maternal effects and the fetal outcome following combination chemotherapy and concomitant anti-retroviral therapy in a pregnant HIV infected woman with HD is almost absent. Although the overall response rate in HD-HIV is lower than in non-HIV [9], the patient described achieved a complete remission, with no unacceptable toxicity. G-CSF was administered prophylactically, and no episodes of neutropenic fever occurred nor did she develop any opportunistic infections (OI's) while on prophylactic anti-infectious therapy. This is despite the high rate of OI's reported in HD-HIV with CCT [4]. We were able to concomitantly administer double agent ART, and not single-agent, as previously reported [9], possibly due to the use of two nonmyelotoxic agents (d4T instead of ZDV, and 3TC). We believe that this more effective mode of ART, along with the anti-tumor effect achieved by CCT, resulted in decreased viral load and increased $CD4^+$ cell count. In addition to low viral load and ART during pregnancy, Caesarian section is associated with decreased rate of vertical transmission of HIV [10], hence this mode of delivery was chosen and a healthy HIV (−) baby was born. Thus, since both the proportion of young women [11] and the incidence of Hodgkin's disease among the HIV^+ individuals [3] are increasing, it seems important to recognize, that concomitant combination chemotherapy and anti-retroviral therapy of HD-HIV in pregnancy is feasible and can be successful, achieving a favorable outcome for both mother and baby, at least in short term.

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